

## Two New Species of the Genera *Anelosimus* and *Achaeearanea* (Araneae: Theridiidae) from Singapore and Indonesia

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アシブトヒメグモ属およびツリガネヒメグモ属  
(クモ目: ヒメグモ科) の 2 新種

**Abstract** Two new species of the spider family Theridiidae are described from Singapore and Indonesia under the names, *Anelosimus kohi* (Singapore) and *Achaeearanea triangula* (Singapore and Indonesia). *Anelosimus kohi* sp. nov. is distinguished from the related species, *A. crassipes* and *A. taiwanicus*, by the straight embolus and long tibia of male palpus, and *Achaeearanea triangula* sp. nov. is distinguished from *A. camura*, *A. mundula*, *A. vervoorti*, *A. wau* and *A. kaindi*, described from New Guinea by the triangular conductor.

Through the kindness of Mr. Joseph K. H. KOH, I had an opportunity to study some theridiid spiders from Singapore. In this paper, I wish to describe two new species of the genera *Anelosimus* and *Achaeearanea* based on his collection. Some specimens of the new species of *Achaeearanea* is also collected by myself from Indonesia.

Species of the genus *Anelosimus* are known from America, Europe, Mediterranean countries and East Asia, but there is no record from the South Pacific areas.

The genus *Achaeearanea* is the second largest genus of the family Theridiidae. Many species of this genus have been recorded since the revisional study by LEVI (1955). The *Achaeearanea* species from America are well known (LEVI, 1959), but those from other areas are poorly known. Up to the present, ten species of the genus *Achaeearanea* have been recorded from the South Pacific areas (CHRYSANTHUS, 1963, 1975; LEVI *et al.*, 1982; KOH, 1989). Of these, five species, *A. camura* (SIMON, 1877), *A. mundula* (L. KOCH, 1872), *A. vervoorti* CHRYSANTHUS, 1975, *A. wau* LEVI, LUBIN *et* ROBINSON, 1982 and *A. kaindi* LEVI, LUBIN *et* ROBINSON, 1982 constitute a species-group characterized by the palpal anatomy, especially by the long embolus and conductor. The present new species has a palpus common with these species and belongs to the species-group.

The holotypes, allotypes and a part of the paratypes of the new species described in this paper are deposited in the collection of the National Science Museum (Natural History), Tokyo (NSMT), and the remaining paratypes are preserved in my

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private collection (HY).

Before going further, I wish to express my hearty thanks to Mr. Joseph K. H. KOH, Singapore, for offering valuable specimens for the present study, and to Dr. Takeo YAGINUMA, Osaka, for his continuous guidance in the course of my study.

*Anelosimus kohi* sp. nov.

(Figs. 1–3)

*Male* (holotype). Total length 3.95 mm. Carapace length 2.11 mm, width 1.47 mm. Abdomen length 2.11 mm, width 1.47 mm. First femur 2.79 mm; patella and tibia 3.26 mm; metatarsus 2.26 mm; tarsus 0.89 mm. Second patella and tibia 2.32 mm; third 1.47 mm; fourth 1.95 mm.

Carapace oval with median circular depression. Chelicera with three teeth on promargin. Height of the clypeus twice the diameter of anterior median eye. Diameters of eyes nearly equal. Anterior median eyes four-fifths their diameter apart and three-fifths from laterals. Posterior median eyes seven-tenths their diameter apart and six-fifths from laterals. Lateral eyes touching each other. Ratio of median ocular area, anterior width: posterior width: length=13: 11: 11. First femora large and thick with many bristles and spines; first metatarsi with 12 pairs of fine ventral spines. Leg formula 1, 2, 4, 3. Palpal organ as shown in Fig. 1; embolus almost straight; tibia long.

Carapace brown, darker in head region. Sternum with faint dusky flecks. Abdomen grayish yellow; dorsum with median longitudinal band, bordered with white stripes.

*Female* (allotype). Similar to male, but differs in the following points: Total length 4.26 mm. Carapace length 1.95 mm, width 1.53 mm. Abdomen length 2.63 mm, width 1.89 mm. First femur 2.89 mm; patella and tibia 3.37 mm; metatarsus 2.58 mm; tarsus 0.89 mm. Second patella and tibia 2.42 mm; third 1.58 mm; fourth 2.21 mm.

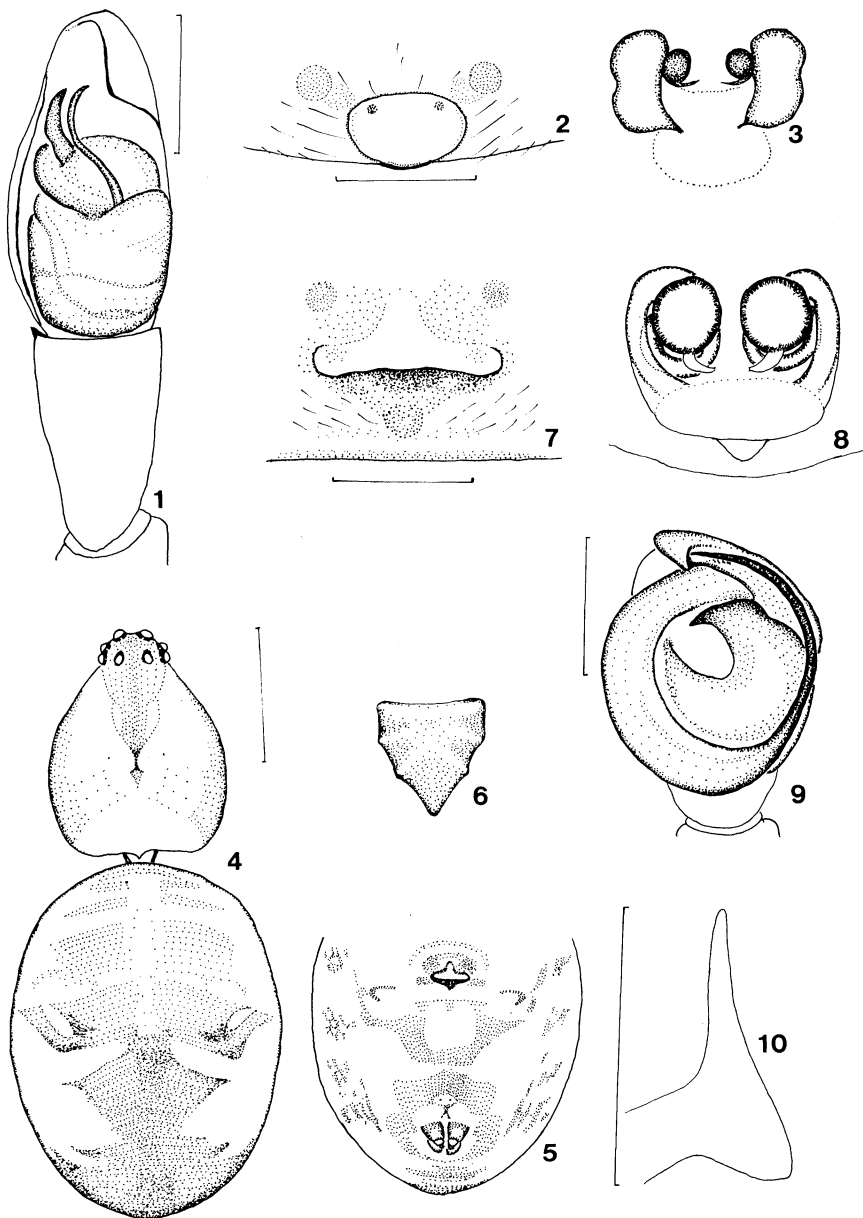
Chelicera with four teeth on promargin. Diameters of anterior median eyes larger than the others (5: 4). Anterior median eyes six-fifths their diameters apart and two-fifths from laterals. Posterior median eyes their diameter apart and from laterals. Posterior median eyes their diameter apart and from laterals. Ratio of median ocular area, anterior width: posterior width: length=13: 12: 10. First femora without ventral spines. Genital organ as shown in Figs. 2–3; seminal receptacles large and tumbler-shaped, with small additional seminal receptacles.

Basal color generally darker than that of male. Carapace and sternum dusky. Femora with longitudinal dusky flecks. Patellae and tibiae with ventral black flecks. Abdomen with black flecks on the anterior margin, and between epigynum and spinnerets.

*Type series.* Holotype: ♂ and allotype: ♀, Sungei Seletar, Mangrove Swamp, Singapore, 18–VI–1989, J. K. H. KOH, (NSMT-Ar 2966–2967).

*Distribution.* Singapore.

*Remarks.* This species resembles *A. crassipes* (BÖSENBERG et STRAND, 1906) described from Japan and *A. taiwanicus* YOSHIDA, 1986 described from Taiwan, but distinguished from the two species by the male palpus having a straight embolus and a long tibia, and the female genitalia with small additional seminal receptacles.



Figs. 1-10. 1-3. *Anelosimus kohi* sp. nov.: 1, male palpus, ventral view; 2, epigynum, ventral view; 3, female genitalia, dorsal view. 4-10. *Achaearanea triangula* sp. nov.: 4, female, dorsal view; 5, female abdomen, ventral view; 6, female sternum, ventral view; 7, epigynum, ventral view; 8, female genitalia, dorsal view; 9, male palpus, ventral view; 10, conductor of male palpus, apical view. (Scales: 0.2 mm except for Figs. 4-6, 1 mm.)

*Etymology.* The specific name is after Mr. Joseph K. H. KOH, Singapore.

*Achaearanaea triangula* sp. nov.

(Figs. 4–10)

*Female* (holotype). Total length 4.37 mm. Carapace length 1.71 mm, width 1.37 mm. Abdomen length 2.58 mm, width 2.11 mm. First femur 2.26 mm; patella and tibia 2.26 mm; metatarsus 2.05 mm; tarsus 0.79 mm. Second patella and tibia 1.74 mm; third 1.26 mm; fourth 1.89 mm.

Diameters of anterior median eyes larger than the others (5:4). Anterior median eyes three-fifths their diameter apart and two-fifths from laterals. Posterior median eyes their diameter apart and three-fourths from laterals. Lateral eyes touching each other. Ratio of median ocular area, anterior width: posterior width: length=11: 11: 9. Leg formula 1, 4, 2, 3. Genital organ as shown in Figs. 7–8; duct thick and long.

Carapace yellowish brown, head region and margin dusky brown. Chelicerae, maxillae and labium dark brown. Sternum brown with dusky flecks as shown in Fig. 6. Legs brown. Abdomen basal color yellowish brown with blackish flecks as shown in Figs. 4–5.

*Male* (allotype). Similar to female, but differs in the following points: Total length 1.92 mm. Carapace length 0.72 mm, width 0.72 mm. Abdomen length 1.13 mm, width 1.03 mm. First femur 1.13 mm; patella and tibia 1.05 mm; metatarsus 0.87 mm; tarsus 0.45 mm. Second patella and tibia 0.82 mm; third 0.53 mm; fourth 0.72 mm.

Diameters of eyes nearly equal. Anterior median eyes two-thirds their diameter apart and one-third from laterals. Posterior median eyes two-thirds their diameter apart and from laterals. Ratio of median ocular area, anterior width: posterior width: length=7: 8: 8. Leg formula 1, 2, 4, 3. Abdomen with dorsal white pigments. Palpal organ as shown in Figs. 9–10; conductor triangular.

*Type series.* Holotype: ♀ and allotype: ♂, Sanur, Bali Island, Indonesia, 24–III–1984, H. YOSHIDA, (NSMT-Ar 2968–2969). Paratypes: 5♀, 6♂, 1 juv., same data as for the holotype, (3♀, 3♂, NSMT-Ar 2970; 2♀, 3♂, 1 juv., HY); 9♀, 2♂, 2 juv., Sanur, Bali Island, 22–III–1984, H. YOSHIDA, (HY).

*Other specimens.* 5♀, 3♂, Jogjakarta, Java, Indonesia, 23–III–1984, H. YOSHIDA, (HY); 1♀, Kranji Swamp, Singapore, 26–V–1985, J. K. H. KOH, (HY); 1♀, Sungei Selectar, Mangrove Swamp, Singapore, 23–IX–1986, J. K. H. KOH, (HY).

*Distribution.* Singapore and Indonesia (Java and Bali).

*Remarks.* This species resembles *A. vervoorti* CHRYSANTHUS, 1975, *A. wau* LEVI, LUBIN et ROBINSON, 1982 and *A. kaindi* LEVI, LUBIN et ROBINSON, 1982 described from Papua New Guinea, but distinguished from the three species by the carapace with median and marginal dark areas, the female genitalia with thick and long ducts and the male palpus with a triangular conductor.

*Etymology.* The specific name is an adjective derived from the shape of the palpal conductor.

## 摘 要

シンガポールおよびインドネシア産のヒメグモ科に属する2新種を, *Anelosimus kohi* (シンガポール), *Achaeearanea triangula* (シンガポール, インドネシア) の名前で記載した. *Anelosimus kohi* sp. nov. は, 近似種の *A. crassipes* および *A. taiwanicus* から, 直線状の栓子と長い脛節により, *Achaeearanea triangula* sp. nov. は, *A. camura*, *A. mundula*, *A. vervoorti*, *A. wau* および *A. kaindi* から, 三角形の指示器により区別できる.

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